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(54) Title: ALKENYL-AROMATIC FOAM HAVING GOOD SURFACE QUALITY, HIGH THERMAL INSULATING PROPERTIES AND LOW DENSITY

(57) Abstract: Prepare an alkenyl-aromatic foam having good surface quality, high thermal insulating properties and low density using an extrusion method by expanding a foamable polymer composition of an alkenyl-aromatic polymer composition containing less than 20 weight-percent covalently bonded halogens and having a polydispersity of less than 2.5 and a water solubility greater than 0.09 moles per kilogram and 2.2 moles per kilogram or less at 130 degrees Celsius and 101 kilopascals pressure and 0.8-2 moles per kilogram of a blowing agent containing 0.4 moles per kilogram or more of a chlorine-free fluorinated blowing agents and water at a concentration of at least 0.22 moles per kilogram; wherein moles per kilogram are relative to kilograms of alkenyl-aromatic polymer. The resulting foam has a density of 64 kilograms per cubic meter or less and a thermal conductivity of 32 milliwatts per meter-Kelvin or less after 180 days.

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